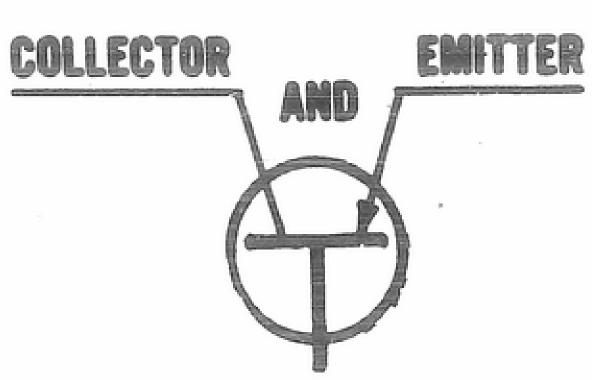
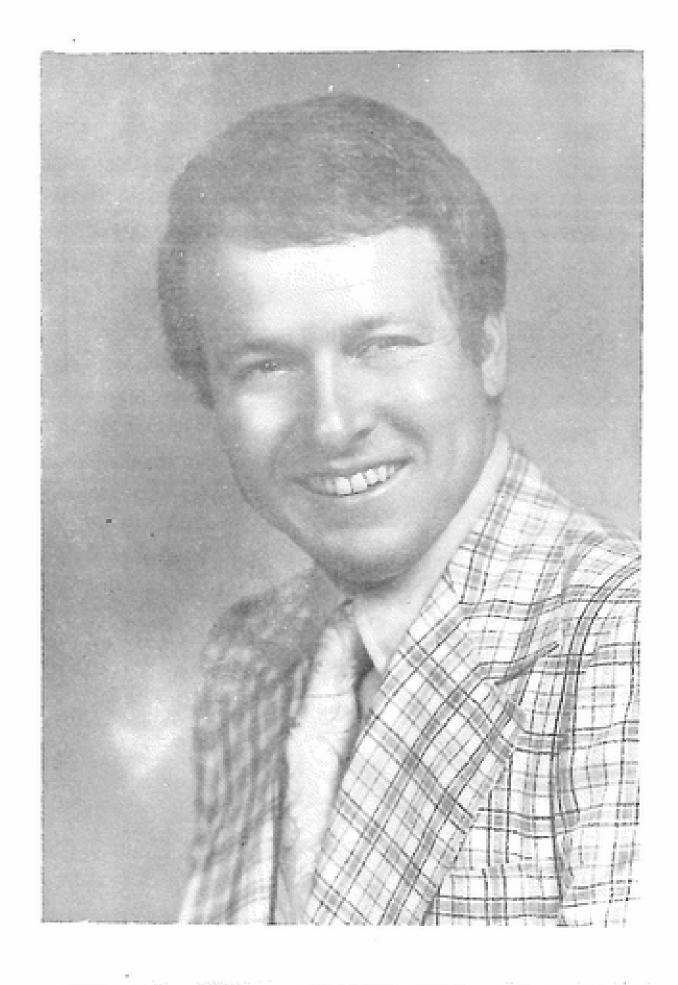
Central Oklahoma Radio Amateurs

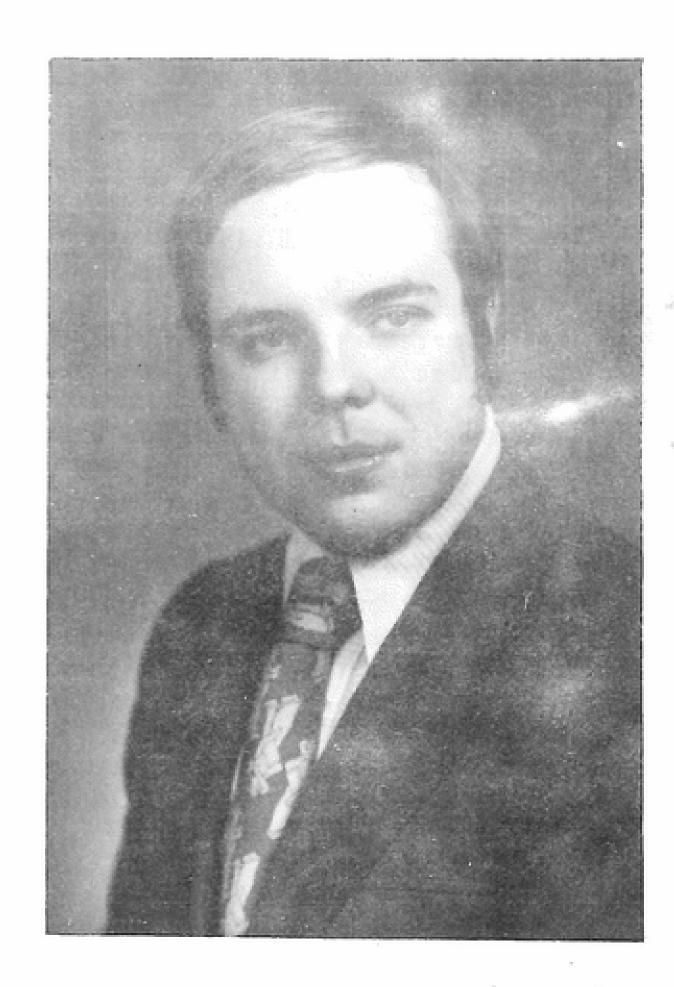


Volume 1

MAY 1975

Number 4





GARY ENGLAND

TOM MAHONEY

Recognizing the potential that amateur radio operators have and the record of public service they hold, these two gentlemen have developed and nurtured the latent talent available by conducting training on weather observation and encouraged participation in the weather net conducted by Oklahoma City Autopatch Association on 2-meter FM. For brief biographical sketches, see pages 3 and 4.

The CORA Collector and Emitter is published monthly by CORA for the participating Amateur Radio Clubs in the Central Oklahoma area. Material contained herein may be reprinted without prior permission with credit given this publication. Address all correspondence to CORA Collector and Emitter, Box 15013, Oklahoma City, OK 73115.

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| Editor for OCVHF | Joe Buswell | WA5TRS | 732-0676 |
| Editor for OKCAP | Larry Dillard | WB5 CWB | 685-4065 |

Central Oklahoma Radio Amateurs (CORA) Inc. was organized to enhance the cooperation of Oklahoma Amateur Radio Clubs in sponsoring activities of mutual interest to the Clubs and Radio Amateurs. Participation in specific CORA activities is optional with the individual Clubs. CORA officers are:

| President | Ken Kendrick | WB5ECJ | 751-4917 |
|----------------|----------------|--------|----------|
| Vice President | Gary McCormick | WA5ETV | 946-2898 |
| Secretary | Ellard Foster | W5KE | 789-6702 |
| Treasurer | Jim Jones | K5PER | 634-5235 |

Participating clubs for CORA Collector and Emitter:

AERONAUTICAL CENTER AMATEUR RADIO CLUB, INC. Postal Station 18, Oklahoma City, OK 73169

Meetings: 8:00 p.m. on first Friday each month, Flight Standards
Building, FAA Aeronautical Center. Club Station W5PAA.

| | President | Bob Ashby | W5HXL | 942-5375 |
|--|---------------------|-------------|--------|----------|
| | Vice President | Al Prince | WB5KCU | 789-1160 |
| | Secretary/Treasurer | Bill Oliver | K5KDR | 329-6333 |
| | Asst to President | Ken Ford | WB5KHU | 528-8770 |

OKLAHOMA CENTRAL VHF AMATEUR RADIO CLUB, INC.

323 N. W. 10, Oklahoma City, OK 73103

Meetings: 8:00 p.m. on third Friday each month, American Red Cross, 323 N. W. 10. Club Station W5LOW.

| President | Carl Drumeller | W5JJ | 789-3788 |
|----------------|----------------|--------|----------|
| Vice President | Tom Stinson | W50ZE | 942-3714 |
| Secretary | Jef Casey | WB5GWB | 528-0252 |
| Treasurer | Ellard Foster | W5KE | 789-6702 |

MID-OKLAHOMA REPEATOR, INC.

Meetings: 8:00 p.m. Tuesday of first full week each month, Oklahoma City EOC, 4600 N. Eastern. WR5ADE 34/94

WR5ADF 07/67

| President | Bill Noland | WA5FWD | 354-5018 |
|----------------------|-------------|------------|----------|
| Vice President | | | |
| Secretary/Treasurer | Don Graham | WA5TAW | 733-3044 |
| Mail dues to Sid Ger | | MWC, 73110 | |

OKLAHOMA CITY AUTOPATCH ASSOCIATION, INC.

Meetings: 8:00 p.m. on third Monday each month. WR5ACB 22/82 147.81/21

| _ | | | |
|---------------------|----------------------|----------|----------|
| President | Frank McCollom | WB5JBL | 751-3577 |
| Vice President | Larry Dillard | WB5CWB | 685-4065 |
| Secretary/Treasurer | Jim Denman | WB5EOL | 681-6048 |
| 7705 S. Charlotte D | rive, Oklahoma City, | OK 73159 | |

Subscription Price: \$3.50 per year to non-affiliated club members





COVER STORY

Gary England and Tom Mahoney, really do not need an introduction since they are probably the best known weathermen in the state, but we thought you would like to know a little more about them and their backgrounds.

GARY ENGLAND has been KWTV's Chief Meteorologist since Oct. 1972. The warmth of his friendly personality has made him an overnite "hit" in Oklahoma tele-vision news.

Gary was previously heard on KTOK Radio, presenting weather programs and severe storm warnings. His famous "THUNDER LIZARD" was born during this period.

He was born in Seiling, Oklahoma, where he graduated from high school as Senior Class President, was on the football squad for 3 years (Captain his senior year), played basketball for 3 years, was on the track team for 2 years and was an F. F. A. member for 4 years. Following summer work on farms and ranches, Gary joined the Navy in 1957, and after 3 years was discharged with an E-5 rank, rated as Aerographer's Mate, 2d Class(weatherman). During his Navy hitch he attended Naval Aviation School at Norman, and graduated 4th in his class form the Naval Weather School, Lakehurst, N. J. He served at various locations throughout the world.

After his Navy days were over Gary attended Southwestern State College at Weatherford, OK. and the University of Oklahoma, resulting in a B.S. degree in Meteorology and Mathematics. He worked at the Atmospheric Research Lab while studying at O.U. He then did some post-graduate work in meteorology.

In 1965, he organized Oklahoma's first commercial weather service. Gary is currently an independent consulting meteorologist. From November 1967, Gary was employed for 4 years by A. H. Glenn and Associates, New Orleans, generally considered the top weather firm in the U.S.A. and internationally recognized for its outstanding work in the field of oceanography and meteorology as applied to the offshore oil industry. As a consultant in oceanography and meteorology, his principal activity was detecting, tracking and forcasting storms and hurricanes in the Gulf Coast vicinity. Gary completed forecasting experience and oceanographic studies for most every part of the world. The most noteworthy was his oceanography study for a proposed offshore New Jersey nuclear generating plant.

Not long ago the Oklahoma legislature created the Okla. Weather Modification Advisory Committee to study possible rain control in the state. Gary England is the only meteorologist from communications medium to be appointed to this committee.

While attending Southwestern, Gary met Mary Helen Carlisle of Hobart, Okla. They were married in August of 1961. Their only child, Molly Michelle, was born in August, 1968.

When not making weather talks, attending luncheon meetings, judging contests, or making personal appearances for every type of organization, he likes to slip away and get in a little fishing which he claims to be his number one leisure time activity.



Thomas J. Mahoney has been a professional member of the American Meteorological Society since August 1970 and has been granted that Society's Seal of Approval for Television Weathercasting, and joined Channel 9, as a staff meteorologist in 1973.

Born in Joliet, IL., he resided there until 1970. It was during his high school days in Joliet that meteorology became his chosen career. As a student there, he was a member of the National Honor Society, National Thespians, and received 3 letters for swimming, He was also a volunteer instructor in the Joliet Red Cross Learn-To-Swim program.

He attended Northern Illinois University, majoring in meteorology and received a Bachelor of Science degree. He continued on for 2 additional years, receiving his Masters of Science degree from that institution, with concentration in broadcast meteorology and air pollution sutdies.

During the summer of 1971, Tom attended Northwestern University, interning on WMA-QTV, Chicago, with Bob Thomas (formerly of WKY-TV). This was the first time that Northwestern had sponsored an intern in television meteorology with WMA-Q-TV, and as a result, Tom was invited to present a paper on the uniqueness of that situation for the American Meteorological Society's meeting of weathercasters in New Orleans in January 1972. Subsequent to his collegiate days, he was associated with WFRV-TV at Green Bay, Wisconsin for $1\frac{1}{2}$ years as a broadcast meteorologist and during this time, was also an assistant forecaster with the Wisconsin Weather Service, a private meteorological consulting firm primarily serving radio stations. He prepared over 30 forecasts per day, which he broadcast 3 times daily for radio clients.

During his 2 years of post graduate studies at N.I.U., Tom was a teacher, instructing classes in earth science at Palatine High School, Palatine, IL. He received a teachers scholarship and an honorary Illinois State scholarship. He was a member of the N.I.U. swim team and the Northwest Symphony Orchestra. Involvement with the American Red Cross blood donor program was another important volunteer service in which he was and still is, very interested.

After Palatine, he later spent 1 year at Oconto, WI., teaching 8th grade earth science courses. He was a member of the Illinois Academy of Science, the National Education Association, and both WI and IL state education associations.

Tom met his wife to be, Susan, while in high school in a water ballet program. They are both competitive swimmers. Susan was also a teacher at Palatine. Tom says she is a good cook and likes to spend her leisure time sewing. They are the parents of a $2\frac{1}{2}$ year-old daughter, Amy, and a $1\frac{1}{2}$ year-old son, Steve. Tom prefers to spend his off-duty hours with his family but he also enjoys most water sports and listening to BIG BAND music. WB5CWB

I just talked to Bob, K5PJU, says the new rec'vr is in. Have a little bit of work to do on the system and it will be on in about 3 to 4 weeks. This is about the schedule predicted.



CLARIFICATION... I met with the (club) presidents in an attempt to explain Carol Langstons comments in the Oklahoma City Times of 11 April 1975. It is unfortunate that people adept and skilled in professional writing sometimes fail to understand the full meaning of what they write about.

The OKC EOC Annual Severe Weather Symposium on 11 April lasted 3 hours and 45 minutes. It was held to advise, review and instruct Public Safety Officials living in central Oklahoma about severe weather observation and reporting. The news article covered about 5 minutes of the symposium and none of the basic subject.

The article is available for all to read but the entire comments of the speakers do not appear in the article. The "wary-ness" I advocated was directed toward the organization needed to handle the large volume of information that can become available during warning and alert periods.

We understand there is an enormous resource of communications in the Amateur Radio Clubs in central Oklahoma. I attempted to make this known to the people attending. I believe the people understood.

The value of the Radio Amateur in Public Service is not and was not in question or challanged. The need for their service in this community is unchanged. We ask that one small article on a back page of the local newspaper not be allowed to destroy the incentive to provide that need.

Charles E. Turnbull, Communications Officer, Department of Safety & Civil
• Defense, City of Oklahoma City.

Well, the time has rolled around again for this input to the club newsletter. Seems I blink my eyes anymore and another month is gone. Couldn't be my getting older - so I wonder what!

Gary, WASETV, our CORA representative, and new Vice President of CORA, tells me that CORA is to sponsor the field day this year. The Executive Committee has voted for the Autopatch Association to support this effort and a committee member has been selected to work with the other clubs to make Field Day a success. He is Sal Abbadessa, WB5HIJ, and I urge you club members to contact Sal and offer your help.

Also, a "well done" to WA5FWD and the MORI group on the swap meet last Saturday at the Oklahoma Military Academy. I would like to see this as a regular thing, Bill. Next issue of the newsletter will see this column devoted to recognizing an amateur for outstanding contribution to our hobby. This could be in the field of public service or service to other amateurs, or to the hobby itself. We would like a thumbnail biography on anyone you would care to nominate for the "Ham" of the month. Call me at 751-3577.

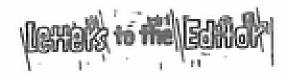
Joe Buswell, WA5TRS, has agreed to be school coordinator for the Ham School, which the club plans to conduct in the fall. So, if you would care to contribute your time to help upgrade your fellow amateurs, yourself, or prospective amateurs, then contact Joe at 732-0676. WB5JBL...

TWO & SIX METER SSB.. There was no response to the six-meter SSB net article, but in spite of it all, there is still some activity around. (Typical lack of interest?) Maybe, if we were about to loose it, there might be!!

On Two-meter SSB, there are at least six more stations operating in the OK City area. Most all are solid state rigs and are around 145.100mHz. WB5CWB

HAM HOLIDAY HELP NEEDED.. Dennis Orcutt, WB5ISN, has accepted the dubious honor of Chairman to secure the prizes for Ham Holiday. This is a very thankless job and I'm sure that Dennis will appreciate any help he can get. Dennis look out! You are going to be flooded with calls to help you on this one...

CB'ers Taking Over?? Last week, HR Report stated that during the month of March, the FCC received 193,060 applications for CB licenses. ONE MONTH!! Seems like there is a message here that most, or all, of us is missing. As evidenced from the lack of attendance at meetings, lack of input to our paper, (except for a few) it's little wonder our ranks are shrinking.. WB5CWB



Rome, Italy 14 March 1975

Dear Jim:

Congrats on new format and glad to receive. Always carry my Ham publications on business trips and on a quick 21/2 week, eight country run. Would appreciate your printing this in next issue:

As a traveling member of Aeronautical Center Amateur Radio Club I will be operating with my French call FØIS in Cannes Film Festival 15-24 May and in Paris for Paris Air Show 25 May-8 June. 20 meters will be main band but 15 and 10 also if band conditions permit. Will be using a new Atlas 310 with Hustler mobile whip and coils. All QSO's will be confirmed by special QSL made for the two above events.

TNX 73 to all.

Harry W6ATC

READ YOUR ADDRESS LABEL --NOW

Help us save money.

As an economy measure the CORA C&E is now being mailed 3rd class. We must have your correct address, especially the ZIP CODE. If anything, including your club affiliation, is wrong advise:

WAS ZNF 123
JOE K HARDING
1020 ARTHUR DRIVE
MIDWEST CY OK 73110
Phone: 737-1044

CLUB AFFILIATION CODE

- 1 ACARC Member
- 2 OCVHF Member
- 3 MORI Member
- 4 OKCAP Member

Or write, CORA, Box 1513, Oklahoma City OK 73115. Otherwise you may not get a paper next month.



Club NEWS

W SLO W The Elmer Gookler Memorial Station

FROM THE PRESIDENT

SORRY TO HAVE MISSED THE MARCH CLUB MEETING, BUT I'M SURE OUR CAPABLE VICE PRESIDENT DID A COMMENDABLE JOB OF PRESIDING. AS YOU MAY KNOW, I WAS AT THE AF MARS CONFERENCE.

NO DOUBT, EACH MEMBER HAS COMPLETED THE ARRL QUESTIONAIRE ON FCC DOCKET 20282 AND RETURNED IT TO HEADQUARTERS. OUT OF THE THOUS-ANDS RETURNED, IT WOULD BE REMARKABLE IF ANY TWO WERE ALIKE. KEEP THIS FIRMLY IN MIND IF YOU'RE TEMPTED TO FEEL ABUSED, SHOULD THE LEAGUE'S STAND FAIL TO PARALLEL YOURS TO A PRECISE DEGREE. NO ONE PERSON HAS A RIGHT TO EXPECT HIS PERSONAL OPINION TO BE REFLECTED, UNALTERED, INTO RULES AND REGULATIONS. THERE ARE 200,000 OF US, EACH DUE AN EQUAL CONSIDERATION. THAT FIGURE. RELATES TO LICENSED RADIO AMATEURS, NOT TO LEAGUE MEMBERS; ALTHOUGH THE TWO SHOULD CONCIDE. NO PERSON SHOULD "FREE LOAD" ON THOSE WHO'RE TRULY CONCERNED; CONCERNED ENOUGH TO BE INVOLVED IN CONCERTED GROUP EFFORT.

BUT DONT STOP WITH JUST SENDING YOUR COMPLETED QUESTIONAIRE TO HQ. EVEN IF YOU DONT FILE YOUR FORMAL COMMENT, ALL 15 COPIES, THERE'S MUCH YOU CAN DO. WHAT ABOUT "ON THE AIR" COMMENT? HAVE YOU CONTRIBUTED CONSTRUCTIVE COMMENT, COMMENT BASED ON THOROUGH STUDY OF FCC DOCKET 20282? HAVE YOU SOUGHT TO CORRECT MISTAKEN ASSUMPTIONS ABOUT THE DOCKET'S CONTENT? YOU'VE PROBABLY NOTICED THAT AN "ON THE AIR" SPEAKER'S VEHEMENCE VARIES INVERSELY WITH HIS COMPREHENSION OF THE DOCKET'S CONTENTS!

YOU, AS AN AMATEUR OF RADIO COMMUNICATION AND TECHNOLOGY, ARE VITALLY CONCERNED. MAKE SURE YOUR VOICE, YOUR JUDGEMENT IS GIVEN WEIGHT! CARL, W5JJ

MINUTES OF APRIL 18 VHF CLUB MEETING

The meeting was called to order at 8 p.m. by President, Carl Drumeller, W5JJ. Seventeen members were present. Self introductions were followed by each members comments on what could be done to improve the club.

The minutes of the March meeting were approved as printed.

Jim Williams, K5VRL, agreed to represent the VHF club as a CORA board member.

WASTRS, with WASJGU seconding, moved that the club send 150 dollars to CORA to help finance this year's Ham Holiday. The motion passed.

WA5JGU, with W50ZE seconding, moved that the club set aside a maximum of 50 dollars to help finance Field Day. The motion passed.

Ken, WB5ECJ, reported that the County CD office will supply 55 gallons of gasoline for use in the generator(s) on Field Day. The CD van will also be available.

CONTINUED NEXT PAGE.



Club NEWS

W5HXL, with K5VRL seconding, moved that the club authorize station trustee, Ken, WB5KHU, to purchase a solid state two meter FM transceiver having at least 6 channels and 10 waters output for not more than 250 dollars. The motion passed and a number of pledges were made by members to help pay for the rig.

The meeting was adjourned at 9:48 p.m.

Jef Casey, WB5GWB, secretary

RUMORS AND GOSSIP DEPARTMENT

JACK, WB5LPT PASSED HIS GENERAL MARCH 21. MAC WB5JDZ PASSED HIS ON FEB 4. THE FOLLOWING PASSED THEIR ADVANCED ON APR 18 -FRED, WB5HQE, BILL, K5KDR, BRUCE, WB5MEA, RON, WA5EAI, & STEVE, WB5CTS. IOM SURE THERE WERE MANY MORE, BECAUSE THERE WAS A LARGE TURNOUT FOR THE FCC VISIT, BUT THESE WERE THE ONLY ONES I HEARD ABOUT. ANYWAY, A GREAT BIG CONGRATULATIONS \$

THE ATLAS 180 REPORTED TO BE DRIFTING, IN LAST MONTH'S ISSUE, IS RECEIVED A NICE NOTE AND A CAPACITOR FROM THE COMPANY. INSTALLED THE PART AND REDUCED THE DRIFT 65 - 75%. LOOKS SIMPLE TO ZERO THE DRIFT OUT. NEXT CLUB MEETING, I'LL GIVE A SHORT TECHNICAL PROGRAM ON TEMPERATURE COMPENSATION AND HOPE-FULLY, FINAL COMMENTS ON THE ATLAS* PROBLEM. JOE. WASTRS

WEATHER NET

THE FOLLOWING STATIONS ARE LOGGING THE OKLAHOMA TRAFFIC AND WEATHER NET, 5:45 TO 6:15 PM ON 3900 KHZ

MONDAY JOE, WASTRS, 732-Ø676

TUESDAY CHARLES, WASJGU, 943-5631

WEDNESDAY KEN, WB5KHU, 528-877Ø

THURSDAY BILL, K5KDR, 329-6333 FRIDAY BOB, W5HXL, 942-5375

SATURDAY RAY, WB5BTT, 732-6498

WE HAVE TO USE EACH OTHER AS ALTERNATES WHEN WE CAN'T MAKE IT. COULD USE SOME VOLUNTEERS TO HELP OCCASIONALLY. GIVE ONE OF US A CALL IF YOU'RE INTERESTED.

WANT ADS

X'CEIVER SB-36 WITH AC POWER SUPPLY. DIGITAL READOUT. 550 WATTS PEP. JUST BACK FROM FACTORY \$550.00 H.T. BURGAN, 751-1646

MOTORCYCLES 67 TRIUMPH 500, RESTORED AND OVERHAULED. NO CUSTOM-IZING EXCEPT FOR BLACK COLOR. \$700.00. 73 HONDA CB350F, PERFECT 4500 HIWAY MILES. RED. \$1000.00 JOE, WASTRS, 732-0676

Tempo Talkie, FMH, full Xtals, flex ant. battery chg'r, Dennis, WB5ISN phone 341-4200.

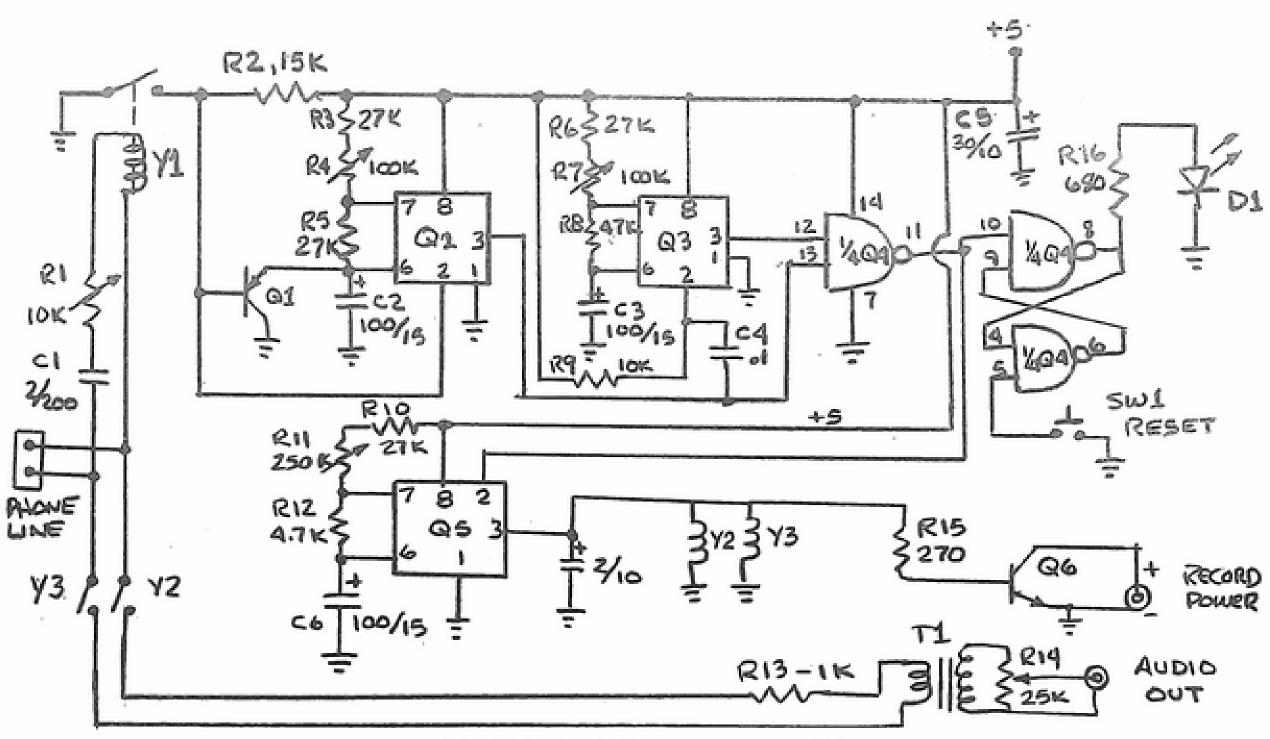
Illustrator-cartoonist. CORA Collector & Emitter HELP WANTED= needs you. Don't be bashful. Pay will be the same as the editors. Contact Jim K5TZS



TELEPHONE MESSAGE TAKER

IF IT SEEMS LIKE YOU ARE ALWAYS ON THE RUN LIKE I AM, YOU MIGHT WANT TO TAKE A CRACK AT THIS GADGET. ONE HAS BEEN IN USE AT MY HOUSE FOR OVER TWO YEARS AND HAS BEEN PRETTY HANDY. THERE ARE DRAWBACKS BUT I WILL COVER THEM LATER.

THIS DESIGN SUITED ME BETTER THAN THE COMMERCIAL GADGETS ON THE MARKET BECAUSE I REALLY DIDN'T WANT THE THING TO ANSWER ALL TELE-PHONE CALLS, PARTICULARLY THOSE FROM SIDING SALESMEN AND THE LIKE. IT ACCEPTS ONLY CODED CALLS; THAT IS, THOSE MADE BY PERSONS WHO KNOW HOW TO WORK THE RECORDER AND WANT TO LEAVE A MESSAGE.



TELEPHONE MESSAGE TAKER

CL IS NON-POLARIZED, 2 MF, 200 VOLTS

D1 IS ANY LIGHT EMITTING DIODE

QL IS ANY PNP TRANSISTOR, I USED 2N1192

Q2, Q3, & Q5 ARE SIGNETICS 555 TIMERS

Q4 IS TTL NAND GATE, 7400. ONE GATE NOT USED.

Q6 IS NPN CAPABLE OF HANDLING YOUR TAPE RECORDER CURRENT. IT SHOULD BE RELATIVELY HIGH VOLTAGE OR BE DIODE PROTECTED. I USED 2N2222.

TI IS A JUNKBOX TRANSISTOR AUDIO OUTPUT TRANSFORMER WITH THE HIGH Z SIDE HOOKED TO THE AUDIO OUTPUT.

Y1, Y2 & Y3 ARE ELECTRONICS APPLICATION CO. LASAH REED RELAYS.
COILS ARE 5 VOLT, 400 OHM. NEARLY ANY 5 VOLT RELAY SHOULD WORK
FOR Y2 & Y3. Y1 NEEDS TO BE PRETTY SENSITIVE. *2213 EDWARDS AVE
SOUTH EL MONTE CA 91713. \$1-60 EACH. (1.94, 105147100), ED)



Club NEWS

WSLOW The Elmer Goulder Memorial Stanton

HOW IT WORKS - WHEN THE PHONE RINGS, PART OF THE RINGING VOLTAGE IS DEVELOPED ACROSS THE COIL IN RELAY YL VIBRATING ITS CONTACTS AND GROUNDING THE BASE OF Q1, CAUSING IT TO CONDUCT AND GROUNDING PIN 2 OF Q2. RL IS PROVIDED TO MINIMIZE LOAD ON THE LINE AND CL BLOCKS THE DC. PREVENTING FOWLUP OF MA BELL®S SYSTEM.

WHEN QL CONDUCTS, IT DISCHARGES C2. OUTPUT PIN 3 OF Q2'IS SWITCHED HIGH WHEN PIN 2 GOES LOW AND THE DEVICE WAITS FOR PIN 6 TO REACH 2/3 VOLTAGE ON PIN.8. AS LONG AS QL KEEPS CONDUCTING, THIS CAN®T HAPPEN. WHEN THE RINGING STOPS, C2 BEGINS TO CHARGE, THE RATE BEING DETERMINED BY VALUES OF C2, R2, R3 & R4. R4 IS ADJUSTED SO THAT Q2 SWITCHES ABOUT SIX SECONDS AFTER THE RING STOPS. IT IS THEREFORE A MISSING PULSE DETECTOR - MPD.

WHEN THE MPD GOES LOW, IT CREATES A PULSE ON PIN 2 OF Q3 SWITCH-ING ITS OUTPUT, PIN 3, HIGH. Q3 STAYS HIGH UNTIL THE VOLTAGE ON PIN 6 REACHES 2/3 VOLTAGE ON PIN 8. R7 IS SET SO THAT APPROXI-MATELY ONE MINUTE WILL LAPSE BEFORE THIS OCCURS AND PIN 3 SWITCHES LOW. DURING THIS TIME PERIOD, IF ANOTHER RING OCCURS, THE OUTPUT OF Q2 WILL GO HIGH AND Q4, A NAND GATE, WILL SEE TWO HIGHS ON THE INPUTS, CAUSING THE OUTPUT TO SWITCH LOW.

THIS LOW TRIPS Q5 WHICH IS ALSO WIRED AS A ONE SHOT, THE TIME IT IS HIGH IS ESTABLISHED BY THE SETTING OF RLL. THIS IS THE TIME THAT THE PHONE IS ANSWERED AND THE RECORDER RUNS. ON MINE, I HAVE 20 SECONDS OF RECORD TIME.

SIMULTANEOUSLY WITH THE TRIPPING OF Q5, THE RS FLIP-FLOP MADE FROM TWO GATES FROM Q4 IS TRIGGERED, LIGHTING LED D1, ANNOUNCING THE RECORDED CALL.

WHILE Q5 IS HIGH, Q6 IS SWITCHED ON, ALLOWING THE RECORDER TO OPERATE. WHEN SETTING THE EQUIPMENT UP, THE REMOTE CONTROL AND MICROPHONE INPUTS ARE PATCHED INTO THE PHONE ANSWERER. THE TAPE IS SET AT ITS BEGINNING AND THE RECORDER MECHANISM IS SWITCHED INTO THE RECORD MODE.

ANOTHER FUNCTION PERFORMED BY Q5 IS THE "ANSWERING" OF THE PHONE. Y2 AND Y3 COILS ARE ENERGIZED, CONNECTING BOTH SIDES OF THE PHONE LINE TO T1 AND SERIES RESISTOR R13. ANY NUMBER OF WAYS OF MATCHING THE TAPE RECORDER AUDIO TO THE PHONE LINE ARE POSSIBLE, WITHOUT GIVING IT MUCH THOUGHT, I RIGGED UP T1 AS A CURRENT TRANSFORMER. IT IS NECESSARY TO PROVIDE A DC CURRENT PATH ACROSS THE LINE TO SIGNAL THE PHONE COMPANY TO STOP RINGING. IF HUM IS A PROBLEM, YOU CAN EXPERIMENT WITH GROUNDING OR UNGROUNDING THE AUDIO OUTPUT SHIELD FOR BEST EFFECT.

THE REASON TWO RELAYS ARE USED FOR Y2 AND Y3 IS REDUNDANCY IN CASE ONE STICKS. THE REED RELAYS I ORIGINALLY USED HAD A BAD HABIT OF STICKING AND I DIDN'T WANT THE PHONE LINE TIED UP.

POWER SUPPLY - SINCE POWER SUPPLIES ARE A DIME A DOZEN, I'LL LEAVE THAT UP TO YOU. MINE IS A SIMPLE ZENER SHUNT REGULATED AFFAIR FALLING AROUND 6V. BE CAREFUL NOT TO GO ABOVE 7V BECAUSE Q4, THE 7400 WILL WIPE OUT. DON'T GO TOO FAR BELOW 5V BECAUSE THE RELAYS MIGHT NOT WORK.

EXPECTED PROBLEMS - Q2, Q3 AND Q5 CAN DO SOME STRANGE THINGS BUT THEY ARE BEYOND THE SCOPE OF, AND ROOM FOR, THIS ARTICLE. C5 WAS ADDED TO PREVENT ONE OF THE 555'S FROM OSCILLATING. C7 WAS ADDED TO SETTLE Q5 DOWN. SINCE THESE THINGS CAN SWITCH AT SUPER SPEEDS AND SOURCE OR SINK 200 MA, THEY CAN CREATE SOME WILD PROBLEMS IF A LITTLE CARE IS NOT TAKEN WITH LEADS. PUT C5 CLOSE TO THE 555'S.

QL WILL SENSE THINGS OTHER THAN RINGS. IN MY INSTALLATION, WHERE THERE ARE EXTENSIONS, I TRIP THE THING OCCASIONALLY WHEN MAKING CALLS IN QUICK SUCCESSION BECAUSE OF THE TRANSIENTS CAUSED BY DIALING, COMPLETED CONNECTIONS WITH YOUR PARTY AND HANGUPS. MAYBE ONCE A MONTH, I HAVE THIS HAPPEN AND GET 20 SECONDS OF RECORDED DIAL TONES

ANOTHER EVENT THAT TRIPS THE THING IS MOMENTARY POWER INTERRUP-TION, LIKE DURING THUNDERSTORMS. I HAVE DOODLED WITH DESIGNS THAT PREVENT THESE PROBLEMS BUT HAVE BEEN TOO LAZY TO WORK THEM OUT.

IF YOU HAVE TROUBLE GETTING THE CORRECT TIMING INTERVALS, CHANGE THE ELECTROLYTIC IN THE TIMING CIRCUIT, THESE THINGS ARE NOT PRECISION, HAVING TYPICAL RANGES OF -50 / 100%. JOE, WASTRS

WHEATSTRAW A.R.C. SPONSORS TROPHY.. In an effort to revive activity on the V.H.F. bands (Other than Repeaters), the WheatStraw Amateur Radio Club is sponsoring a "traveling" Trophy. Anyone winning the trophy 3 consecutive times retains possession of the trophy.

The trophy will be awarded for the highest reported score for operation in the 6 and the 2 meter bands during Field Day on any and all modes. (Per Official Field Day Rules.)

Competition for the trophy is open to all organized Clubs in Oklahoma who wish to participate. Entrants should submit copies of their ARRL Field Day Log Sheets within 2 weeks after Field Day for judging. Remember, NO REPEATER CONTACTS.

For Further information contact: Jim Williams, K5VRL, 2532 NW 39th St, OK City, OK 73112; Joe Garland, WA5FLT, Box 204, Calumet, OK 73014; or, Leonard Hollar, WA5FSN, 710 South Tenth St, Kingfisher, OK 73750.

FOR SALE

IC21A with DV-21 about 5 weeks old. Complete \$750.00
PS-24 VHF Eng. 24 amp. regulated power supply \$65.00
Call evenings, Larry- WB5CWB ph. 685-4065
Clegg FM-27B, A real good one, like new--- \$300.00
Heath Mehawk Recv'r- with manual 160 thru 10, EXCELLENT -\$85.00
Wally ph. 681-3439

TECHNICAL REVIEWS

W 5 I I



TELECOMMUNICATIONS, Mar, courtesy of W5KE, has an article from Collins Radio on HF antennas designed to minimize the effect of skywave skip; it involves an interesting method of feeding.

ELECTRONIC ENGINEERING TIMES, 10 Mar, sez we'll be using microprocessors in our testing equipment within a year. Hmmm, do you suppose they'll cost less than the gear they're supposed to test?

73, Apr, tells how to assemble commercially-available comments into a hand held 144 MHz transceiver. Speaking of MHz, one 73 author claims these commonly available toroids have a rating of 88 MHz. Question: Is this an April Fool spoof or does 73 need authors and/or proofreaders who know the difference between a millihenry and a megahertz? Balancing this gosh-awful mess, there are two good articles concerning telephones, one on NiCads, four on antennas, one on a 1.8 MHz CW transmitter, and a couple of much needed chunks of satire on putrid operating practices. A rather good issue!

ELECTRONIC TECHNICIAN/DEALER, Mar, courtesy of W5KE, contains an excellent "perspective" on semiconductor diodes plus an exposition on the various types of 'scopes.

QST, Apr, among other items, tells how to build and to use an RF bridge....the one instrument that can really tell you something about your antenna.

ELECTRONIC ENGINEERING TIMES, 24 Mar, has a complete run down on electronic calculators, complete with all the info needed to enable you to make a wise choice in purchasing one. Also, it tells how the FCC is trying to regulate the manufacture of audio gear so that it won't pick up and reproduce every RF signal drifting past....and how the manufacturers are dragging their heels.

ELEMENTARY ELECTRONICS, May-Jun, tells how to build a converter for reception of VLF signals. It has a surprising amount of other useful items interspersed among the CB trash. Their Antique Radio Corner always has much of interest.

RADIO COMMUNICATION, Mar, has info on feeding paraboloidal dish antennas, aural devices to tuning xmtrs for sightless operators, squashed multiband antennas, a talk on "Room for Improvement", and many items of intriguing interest in "Technical Topics."

RADIO ELECTRONICS, May, has some fair stuff on Op Amps and not a thing else even worth reading.

IEEE SPECTRUM, Apr, probes the future of electronics with many aspects and far-reaching hypotheses.

SHORT WAVE MAGAZINE, Mar, shows a form of inductively-loaded 1.8 MHz antenna, a transverter for 432 MHz, and that's about all.

POPULAR ELECTRONICS, May, has a project for building an adapter that will enable a counter to perform as a digital VOM. Another article claims to tell you how frequency synthesizers work. Still another makes the same claim for DC-DC converters.

CQ, Apr, tells how to make a 1.8 MHz CW transmitter from a rare 2 MHz ARC-5 transmitter (I've put a BC-696A on 1.8 MHz by means of two switched capacitors), has wise words from W6SAI on Docket 20282, more wise words from the same source on antennas, a description of an RF transistor tester, some hints on "hotting up" old receivers, more ideas on low power operation, and good advice to Novices.



MID-OKLAHOMA REPEATOR INC.

MORI Meeting May 6,1975

The Monthly Meeting of the Mid Oklahoma Repeator Inc. Will be at the Oklahoma City EOC 4600 North Eastern. 8:00PM.

A hopefuly short business meeting will consist of the Following:

1. Election of a new Vice President.

2.A report from the By-Laws study committee, and club action on the trustee section of the By-Laws.

3. The making of a loan of \$150. to CORA to support Oklahoma Ham Holiday/ARRL State Convention.

4. The making of a loan to CORA(amount Unspecifyed) for the joint support of Field Day, for food etc. to be at least partly repaied. From food sales, Coffee will be free to Opearters.

5. The reprinting of the By-Laws as revised and the expense of mailing to each member.

The program will feature the RCA VIS-AUD Slide and tape on the COS/MOS CD4000A Series integrated circuit. This is a sneak preview of one of the programs that possibly will be used at Oklahoma Ham Holiday, but don't tell anyone - Hi! Hi!

When will the New 34/94 machine be back on the air? Just as soon as possible. I am advised by Wayne Hogan that Jim Worthy and his crew are working as hard and fast as possible to accomplish that feat. Power has been applied to the transmitter and it looks like that with a little tuning, it will be fine. The antenna brackets have been mounted on the Liberty Bank Building and the helix is in our hands for the installation.

I hope that every one enjoyed the MORI/OCAPA flea market as much as I did. A lot of good equipment and some boat anchors changed hands. I hope in the not to distent future we can do this abain. Also I would like to thank Jim Stanberry and the Oklahoma Military Academy for the use of there facility. What a great place!

I am sill looking for some 20 or 21 guage silk-covered wire. I understand its not made any more just thought someone might have some stuck back some where.

See you at the May 6, Meeting WA5FWD Bill.

For Sale or Trade .

Dycom 10-100 2M amp. Clegg Zeus, and Intercepter w/pwr supply sell trade or make offer, Jim WB5E0L phone 681-6048.

YAESU, FTV-650 6 meter transverter, like new with manual. Drade, TR-6,MS4 and pwr supply, excellent cond. Larry WB5CWB 685-4065.



MID-OKLAHOMA REPEATOR INC.

FOR SALE:

Heathkit Seneca VHF-1 120 warr

FCR SALE:

Heathkit Seneca VHF * 1 L20 watts * full VFO, 6 and 2 AM.

RME VHF 152 Tuneable converter for 10-6-2 fixed output for 7 mhm.

SP 600/ux-17A Receiver 550 khz-54mhz.

Radio Shck Transistor Tester #22-024

SWT Digital Freq. Counter W/20 mhz plug in and Capacitor analizer plug in.

All above with manuals. See or Call Fred Wright, K5HFN 737-8784.

Hammarlund SP 600 JX Rec'vm, general converage, .54 to 54 meg. with manuals, Motorola dispatcher rec'vm, make offer or will trade. WB51MT-Dave Nelson.

Rt 2 Box 160, Tuttle OK Phone 376-2542.

WANTED:

146.67 xtal, receiver, For HW202 Contact Jim K5VRL.

I want to thank, on behalf of The American Cancer Society, the following Ametures for the fine work and time spent, collecting money and taking it to the bank for other valunters to count.

I want to thank the following amatuers, on behalf of The American Cancer Society, for the fine work and time spent in collecting money on the night of April 17 1975. Bill Blakely, WA5IQH. Marvin White, K5HQP. WA5JGU, Charles Greene, Clarke, K3WGF WA5FWD, Bill Noland K5VRL, Jim Williams, and to the wives that went along.

The XYL COMMITTE for Ham Holiday would like to invite any one who has a craft they may think would be of intrest to others please get in touch with Helen Williams, 942-0536

The E.C.C. is now equipped with a whistle or tone device that gets their attention. This is how it works. During the hours of 8:00 A.M. to 11:30 P.M. (except Thursday and Friday P.M. There is a licensed Amateur on duty. With the device "ON", only sounds of a Frequency of 1477 cycles can be heard. This corresponds to the high tone of the digits 3, 6, #, on a touchtone dial or whistle like you were calling your dog- (No pun). The operator will hear the tone and answer when he can get to you. When no amateur is available the device will be set to Tone "9". Have your message ready and then push the "9" button and deliver your message. No reply will be given unless it is a true emergency- "Life or Property in immediate danger". Be concise and know where help is needed. For example- A two car accident on I-40, one block east of May Ave. in the west bound lane - no injuries. Repeat location. You have 55 seconds to deliver your message. When message is delivered, stand by for the remainder of the minute. The E.O.C. will monitor 07/67 until the 34/94 repeater is back in service,



MID-OKLAHOMA REPEATOR INC.

In the January issue of QST, M9ESG, chairman of the Emergency Freparedness and Disaster Operations Committee of the Associated Public-Safety Communications Officers (APCO) Suggested to W1NJM, ARAL Communications Manager, that amateurs may do well to become familiar with the Aural Brevity Code used in many other services and perhaps even adopt it as an amateur standard, especially in repeater operation.

Many amateurs look at the so-called "10-Signals" as a hodge-podge of signals used for "Cops and Robbers", or by the CB*rs; but the fact isthat they have been used extensively and, for the most part, efficiently, by a number of the Public-Safety services for many years. Perhaps we should stop making jokes about them and consider them as a part of a universal voice-procedure language in our own o erations. The revised "10-Signals" list contains specific meanings for numbers up to 40 (the last five are reserved for future use). Numbers above 40 are used for special purposes and have significance only to those to whom especially assigned. That is, if you hear a number above 40, it does not apply unless you are a member of the special group involved.

Here is a list of the "10-Signals as revised by APOO's"Project 14": 10-18 Urgent 10-1 Signal weak 10-19 (In) contact 10-2 Signal strong 19-20 Location 10-3 Stop transmitting 10-21 Call by phone. 10-4 Affirmative(OK) 10-22 Disregard. 10-5 Relay(to) 19-23 Arrived at Scene 10-6 Busy 10-24 Assignment Completed. 10-7 Out of service. 10-25 Report to (meet). 1:-8 In Service 10-26 Estimated Arrival time 10-9 Say again 10-27 License/Permit info. 10-10 Negative. 10-28 Ownership info. on duty. 10-11 10-29 Records Check. 10-12 Stand by (stop). 10-30 Danger/Caution 10-13 Existing conditions. 10-31 Pick up. 10-14 Message/information. units needed 10-32 10-15 Message delivered. 10-33 Help me quick! 10-16 Reply to message.

The question naturally arises, "Thy not skip the 10 and just give the other number?" Because prefacing the signal with "ten" is not only easily understood, but is an indication that a brevity signal is intended. It is like the Q in a CW Q signal. If you omit the "ten", the number could refer to something else, but preceded by the "ten", the receiving operator knows precisely what is intended.

10-34 Time.

The Big question is, do we want to use these signals as standard procedure? How about during emergencies when working with Public-Safety groups? It's something to think about.

(Extracted in part from QST for January, 1975)

10-17 Enroute.



THE PRESIDENT'S CORNER

A look at the "Coming Events" on the back cover shows that there is a lot going on and coming up in the way of Amateur Radio activity. It should be an interesting Spring and Summer ahead. Fortunately, we were spared on any severe weather during the past month, but this is the season for it to happen so it behooves us all to be prepared, have the equipment ready and brush up on net operation and traffic handling procedures.

Charley, WA5JGU, is representing ACARC on the CORA Field Day Committee. They have agreed to try for the Lake Overholser site where it has been held the past couple years. Watch for further news as plans shape up and plan to come out, help set up, get in some fast operating and have a weekend of fun.

The CORA Committee for Ham Holiday '75 met with West Gulf Division Vice Director, Jack Gant, W5GM at the Southgate Inn to look the facilities over and shape up plans to make Ham Holiday a State ARRL Convention. The facilities at Southgate look great with more room and reasonable rates on food and lodging. A1, WB5KCU, is busy working on the publicity for this event. Roy Albright, Division Director, will make a mailing for us to all West Gulf ARRL members. Please send in your pre-registration early to help CORA with operating money to make this bigger and better than last year.

While we haven't had any severe weather this past month, we haven't been exactly blessed with good weekends for roaming the great outdoors. Maybe next month will be better. I did get the "Porta Shak" out for a good weekend at Roman Nose. In addition to some fine leisurely loafing and a raid on the Blaine County Dairy for a bunch of their cheese, I did string up the 75 meter inverted vee and fire up the SEE-34 for some fine portable contacts. Needless to say, the "Porta-Shak" is poised ready to go on the next good weekend.

Don't miss the meeting Friday, 2 May 8:00. Program H. O. Townsend, WA5MLT will tell us about the Post Office automated mail sorting equipment with color slides. We also have a bunch of goodies for you. See you all Friday!

Bob W5HXL

MINUTES OF ACARC 4/5/75

Meeting was called to order at approximately 8:00 p.m. by President Ashby. There were 29 members and guests present. Each was asked to introduce himself and give a short comment.

Charlie, WA5JGU, just returned from Shreveport and a bad weekend - weatherwise. He is having a problem parking his travel trailer. Don, WN5NIY, is working to get rid of the N in his call. Melvin, K5VWQ, spent a week in Eastern Oklahoma. He has been listening quite a bit. Melvin also reported Father John McGinty has been ill, but is much better now. Melvin also reported that he and WA5FWD and some others had received an award from the League for their work during the Yukon flood. Jeff, WB5GWB, has been busy building a 16 element, 2 meter beam. Ken, WB5KHU, has been moving into a new house.



MINUTES (Contd)

A1, WB5KCU, had some good contacts on 20 meters. He worked his son in Florida, but could hardly hear him and finished by phone patch thru Bob, K5AYL, in Del City. Al also worked Frank and Deanna Crosley in California. They are former ACARC members. Frank and Deanna will be back in Oklahoma on July 4th and will be working mobile. Jerry, W5MCJ, reports Bill Todd is feeling much better. Jerry believes something should be done about the malicious interference on W1AW, 07-67, etc. If you are interested in trying to track these people down, give Jerry a call. Todd, WA5VAQ, has been installing a burglar alarm. George, W5NTL, has been putting his linear back together. Marvin, K5HQP, has been working on teletype. Fred, WB5HQE, is waiting on a Heathkit HB2O2. Bob, W5HXL, says the "Porta-Shak" has a busted water pipe. Gene Halley has been putting together a scanner and a receiver - both from Heathkit.

Each club in CORA needs to make a loan of \$150.00 for Ham Holiday. Motion was made and passed to loan CORA \$150.00. Field Day will be in June and all four clubs in CORA will participate. A motion was made and approved to contribute \$50.00 for field day expenses. Charlie Green, WA5JGU, will be this club's representative concerning advance planning, etc. The club generator - a PE75 model - is in need of sandblasting and spray painting. George, W5NTL, will see about getting it sandblasted. Then Melvin, WA5VWQ, will spray it. Meeting was adjourned for refreshments at approximately 9:00 p.m.

Billy J. Oliver, Secretary

The following letter was received from Woodrow J. Welling, W7KMQ, P. O. Box 683, Logan, Utah 84321

"June and I want to express our appreciation for your going to all the trouble in mailing the Collector and Emitter to us here in Logan. We have looked forward to and enjoyed each issue and will be looking forward to many more. It has been our only contact with many of our amateur friends in OKC but we hope to make some contacts on the air.

I retired from the Center on June 28 and we moved here to Logan on July 15. June is teaching at Utah State University while I am just living it up. We bought a house last November and got the tower up. We are presently working only 75, 40 and 15 meters but will soon be on 20 and 10 also. Eventually we hope to add VHF.

If any of you are ever passing through Logan please drop in. Our street address is 380 West on 600 North. The house is a white flat roofed one with a large elm tree in front and a 48 ft. tower behind.

Thank you again.

.73

s/Woody W7KMQ"

FOR SALE: Complete file of CQ, 1950-1960and most issues up to present. Call Elmo Black. 528-6467 or 341-5126.



EDITORIAL

There is a group of noteworthy people in the amateur radio fraternity that sometimes do not receive the credit that is due them. They are people for which I have a very deep admiration. They are people who have a great deal of "book learning" or very little "book learning", but all have a vast reservoir of that very important substance that comes from UNK (University of Hard Knocks), namely experience.

Some chew the rag.

Some WAS:

Some WAC.

Some are 35 wpm cw men.

Some would be hard pressed to work 13 wpm.

Some are builders.

Some buy commercial equipment.

Some assemble kits.

Some work DX.

Some work only VHF, UHF.

Some work maximum legal power.

Some work QRP.

Some get their kicks from antennas.

Some are TV people.

Some work RTTY.

Some are FAX.

Some FM.

Some work satelite.

Some work moon bounce.

These people have been a great inspiration to most novices and have been that extra push that a great lot of us needed to take that step into Amateur Radio. While some participate in part, or all of the above activities, ALL are willing to give their No. 1 effort to help, advise, assist, lend equipment, encourage, train, examine, and go that extra mile to help the fledgling in this wonderful world of Amateur Radio.

I will not attempt to categorize these aforementioned people. I cannot place them in any class of license, age group, etc.

Thank you all Amateurs

Don Templeman WN5NIY Editor ACARC

A SUMMARY OF THE AMATEUR RADIO PUBLIC SERVICE CORPS

A means for public service is provided by the ARRL sponsored Amateur Radio Public Service Corps (ARPSC). This corps consists of two divisions called the Amateur Radio Emergency Corps (ARES) and the National Traffic System (NTS).

Amateur Radio Emergency Corps nets are generally local in nature. AREC direction is provided by Emergency Coordinators (EC) appointed by the State Section Communication Manager (SCM). Liaison with the National Traffic System nets (NTS) is usually affected at the local level, and is a result of

SUMMARY (Contd)

cooperation between the Emergency Coordinator and the National Traffic System Net Manager. A plan to communicate in case of emergency is of great importance.

National Traffic System nets are either local, sectional (State), regional or area. A section net generally is a State net. A region net generally comprises a call area and an area net generally consists of a time zone. The Pacific Area net includes both the Mountain and Pacific Time Zones. Net Managers for section nets are appointed by the Section Communications Managers (SCM). Managers for region and area nets are appointed by the ARRL Communications Manager. NTS managers appoint daily Net Control Stations (NCS) and liaison stations to meet other NTS nets. In some cases, both a transmit and receive only, station is sent to region nets and almost always to the area net. Net managers also make periodic reports to the appointing authority. Section, region and area nets are generally long haul traffic nets.

Traffic handling and emergency work provide a lot of satisfaction to the operator and benefits Amateur Radio and the community. Traffic handling provides direct contact with the public and is a means to publicize Amateur Radio. Dedicated emergency and traffic conscious operators are necessary for both the AREC and NTS to function effectively. An operator who can devote on night a week to traffic or emergency nets is a valuable asset to the system and Amateur Radio.

The Transcontinental Corps is not a net but a group of operators who send and receive messages between areas. These operators keep out-of-net schedules and select the frequencies most likely to provide adequate communication. Each area has a Transcontinental Corps Manager who makes schedules for the TCC operators. The operation of the TCC is covered in Appendix III, page 22, of the Public Service Communication Manual. This publication is free on request from Hq, ARRL.

The Radio Amateur Civil Emergency Service (RACES) is not an Amateur directed activity, but it is recognized and supported by ARRL. It is under the direction of the Office of Civil Defense, an agency of the Government.

H. A. Gilbertson, W5RB

CHATTER

Ellard W. Foster, W5KE, and YF took a trip to Pennsylvania to visit their elder son and his family. Nothing like grandchildren to coax people off on trips!

Clarence C. Drumeller, W5TKC, received a promotion to the rank of Major in the USAF. Along with that came the news that his next permanent duty assignment will bring him back to the United States next August.

Bill Peterson, WN5NXO, is a "retread". That is, he was on the air back in 1922 but let his license lapse during the 30's. He still can copy International Morse Code with celerity.

Bill Todd, W5UZX, is feeling better we are happy to report. During the tornado over Sayre in late March, he called WA5JGU to offer his assistance in any way he could help with emergency communications.

Bill Hulse, W5UGZ is looking for 2 Drake TR-22. Can you help him?

| Every S | MAY MONDAY Phone Eme unday 8 a | TUESDAY Ergency Ne | | HAP THURSDAY | PENI FRIDAY 2 ACARC meets | NGS SATURDAY |
|---------|-----------------------------------|-----------------------|----|--------------------------|------------------------------------|-----------------|
| 4 | 5 | 6 MORI meets | 7 | 8 | 9 CORA at Red Cross | 1 0 |
| 11 | 12 | 13 | 14 | 15 | 16 VHF meets | 17 |
| 1 8 | 19 _{OKCAP} | 2 0 | | 22 C&E 'Paste-up'' | 23 | 24 . |
| 2 5 | 26 Memorial Day | 27 | 28 | 29 | 3 0 | 31 |

See page 2 for time and place of happenings and/or information.

LATER--- Plan Ahead;

June 21/22 Oklahoma Amateur Radio Picnic/Campout.

Lake Overholser - Oklahoma City

June 28/29 ARRL Field Day - Details Next Month

Aug 2/3 Oklahoma HAM HOLIDAY & ARRL State Convention

Oct 24/26 Texoma Hamarama

CORA COLLECTOR & EMITTER = Box 15013, Oklahoma City OK 73115

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